

METHODS AND APPARATUS FOR LEXICOGRAPHICALLY SORTING CYCLIC DATA

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ABSTRACT

Methods and apparatus for lexicographically sorting cyclic data are disclosed. In one illustrative example, a method of lexicographically sorting data includes the acts of receiving a set of N cyclic shifts of N characters identifiable by an array of indexes $\{0, 1, 2, \dots, N-1\}$; sorting the set of cyclic shifts based on a comparison of a first character of each cyclic shift; and for an n th sorting iteration of the set of cyclic shifts, where $n = 1, 2, 3, \dots$, up to $2^n > N$: sorting at least a subset of the cyclic shifts which are identifiable by a subset array of indexes in the array in accordance with a previous sort of cyclic shifts associated with the subset array of indexes plus $2^{(n-1)} * \text{modulo}(N)$; and repeating the sorting for a next n th sorting iteration as necessary until the set of cyclic shifts are lexicographically sorted.

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